



BTL7-abcd-Mnnnn-fg-lm

BTL7

Magnetostrictive linear position sensor Generation 7

a Interface

V = EtherNet

b Operating voltage

5 = 10 ... 30 V

c Interface characteristic 1

0 = Flexible Magnet Mode (1 - 16 magnets)

d Interface characteristic 2

E = EtherCAT

Mnnnn Nominal length (4-position)

M0500 = metric in mm

(M0025...M1016: with 8 mm rod diameter)

(M0025...M7620: with 10.2 mm rod diameter)

f Form factor

A = Mounting threads M18x1.5, for flat seal

B = Mounting threads M18x1.5, for O-Ring

g Form factor characteristic

8 = Rod diameter 8 mm

- = Rod diameter 10.2 mm

l Connection type

C = Connector

m Connection type characteristic

003 = 1 x M8x1 with 4 pins + 2 x M12x1 with 4 pins

Magnetostrictive Sensors BTL7 -A/B- Series - EtherCAT

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Basic features

Approval/Conformity	CE UKCA cULus WEEE
Magnets, number (factory setting)	1
Magnets, number max.	16 minimum separation between magnets 65 mm.

Display/Operation

Error value	0x7FFFFFFF
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Electrical connection

Polarity reversal protected	Ub up to 36 V
Short-circuit protection	to GND

Electrical data

Current consumption max. at 24 V DC	nnnn < 1525: 120 mA nnnn ≥ 1525: 160 mA
Inrush current	nnnn < 1525: ≤ 500 mA/10 ms nnnn ≥ 1525: ≤ 500 mA/25 ms
Operating voltage Ub	10...30 VDC
Output signal adjustable	yes
Overvoltage protection	Ub up to 36 V
Switch-on delay max.	10 s
Voltage-proof up to (GND to housing)	500 V AC

Environmental conditions

Ambient temperature	-40...85 °C
EN 55016-2-3, Radiation	For industrial and residential use
EN 60068-2-27, Continuous shock	150 g, 2 ms
EN 60068-2-27, Shock	150 g, 6 ms
EN 60068-2-6, Vibration	20 g, 10...2000 Hz
EN 61000-4-2, ESD	Severity Level 3
EN 61000-4-3, RFI	Severity Level 3
EN 61000-4-4, Burst	Severity Level 3
EN 61000-4-5, Surge	Severity Level 2
EN 61000-4-6, High-frequency fields	Severity Level 3
EN 61000-4-8 Magnetic fields	Severity Level 4
IP rating	IP67 with connector
Relative humidity	≤ 90 %, non-condensing
Storage temperature	-40...100 °C
Temperature coefficient typ.	≤ 18 ppm/K at 50% of nominal stroke 500mm

Functional safety

MTTF (40 °C)	111 a
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Interface

Data format	32-bit signed
Interface	EtherCAT

Material

Cover material	Aluminium, Die-cast, nickel plated
Housing material	Aluminium, Anodized
Housing material, surface protection	Anodized
Material flange	1.3960 stainless steel
Protection tube material	1.4571 stainless steel

Mechanical data

Installation length from contact surface	nnnn + 90 mm
Pressure rating max.	g ≠ 8: 600 bar g = 8: 250 bar
Pressure rating, note	when installed in hydraulic cylinder
Speed detectable max.	10 m/s
Tightening torque max.	100 Nm

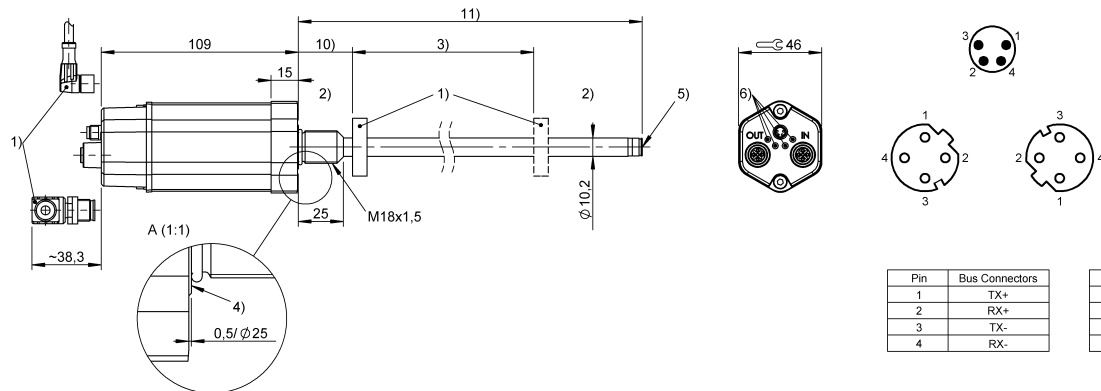
Range/Distance

Linearity deviation	nnnn = 0050...5500: ± 30 µm nnnn > 5500: ± 0.02% FS
Measuring length	25...7620 mm
Repeat accuracy	≤ ± 5 µm
Sampling frequency max.	nnnn = 0050 ... 0250: 1100 Hz nnnn = 0251 ... 0600: 960 Hz nnnn = 0601 ... 1300: 775 Hz nnnn = 1301 ... 2700: 495 Hz nnnn = 2701 ... 5500: 245 Hz nnnn = 5501 ... 7600: 180 Hz nnnn = 7601 ... 7620: 170 Hz

Magnetostrictive Sensors BTL7 -A/B- Series - EtherCAT

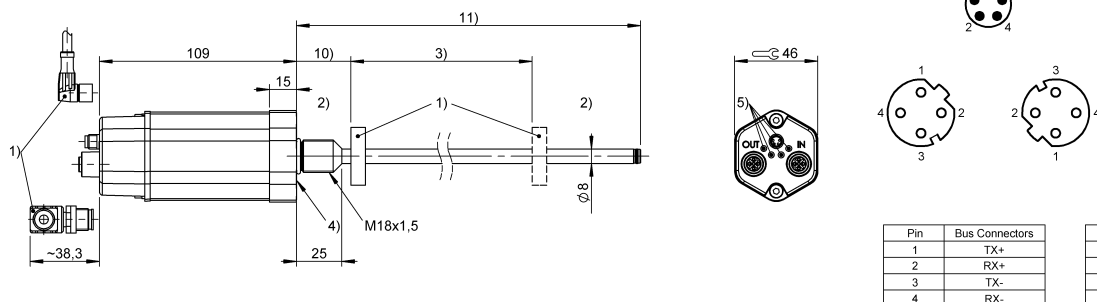
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BTL7-V50E-Mxxxx-B-C003



- 1) not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) Internal threads M4x4/6 deep
- 6) LED function indicator
- 10) Null point
- 11) Installation length

BTL7-V50E-Mxxxx-A8-C003



- 1) not included in scope of delivery
- 2) Non-usable area
- 3) Nominal length = Measuring length
- 4) Mounting surface
- 5) LED function indicator
- 10) Null point
- 11) Installation length